Tutorial

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Behavior modification in myofunctional therapy

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The myofunctional therapist has the responsibility of retraining muscles, changing the pattern of an involuntary reflex, or more simply, changing behavior. It is appropriate, therefore, that the myofunctional therapist consult the theory and technique of "operant conditioning" or "behavior modification" which has revolutionized the tenets of the psychology of learning. B. F. Skinner's techniques have speeded up animal learning drastically, have been used effectively to improve behavior in psychiatric institutes, and has been used with delinquent behavior.¹ Operant conditioning is the operating principle behind teaching machines. "It can be used for self-control of unwanted habits, and even for Yoga-like voluntary control over heart beat and blood pressure and other autonomic functions that have been supposed to be beyond conscious control."² Therefore, if acquisition of desirable muscle behavior is to be achieved, methods of modifying behavior must be clearly understood.

Operant behavior or instrumental behavior may be defined as behavior that is under control of its environmental consequences. When the consequences of a behavior serve to increase the frequency or probability of occurrence of the behavior, the consequence is called *reinforcement*.

The basis of Skinner's methods of learning and behavior modification is his principle of contingent reinforcement or operant conditioning which he stated in 1938 in *Behavior of Organisms*.¹ He showed that a three-term formulation is necessary to describe how an animal or human being is induced to change its behavior. The three necessary terms are stimulus, behavior, and reinforcement.²

The first event is some stimulus situation; next comes some behavior that the organism may then show or emit; and finally there is reinforcement which is that action from the environment which is immediate and contingent on that particular behavior. Any reinforcer which is followed by an increase in the probability of that behavior is called a positive reinforcer and that is what we are concerned with. "A reinforcer may be something edible, a smile, a reassuring word, or a friendly pat on the back, if it increases the probability that the behavior it follows will be emitted again."³

The fastest method of changing behavior is to give positive reinforcement every time that behavior fluctuates in the desired direction. The reward reinforces the new behavior and can be again repeated and withheld, so proceeding on a "reinforcement schedule" step by step to reach the final desired behavior. "The size of the reinforcer is much less important than its immediacy and contingency in shaping behavior. An animal will work

Fig. 1. The stimulus, behavior, and reinforcement relationship. S is the stimulus situation. The B is the behavior performed by the organism. R is the reinforcement from the environment which is the consequence of the particular B.

harder for a sequence of small bites of food than for a dinner which would be satiating, and a gambler can be hooked by repeated small payoffs."²

It is relevant at this point to mention the consequences of punishment according to the behaviorist theory. Skinner states that it is true that punishment can stop unwanted behavior almost immediately. "This, of course, reinforces the punisher, leading him to do it again and again. But the experiments show that punishment is ineffective unless applied immediately every time, and the punished behavior always comes back, along with additional behavior such as attempts to escape or to evade punishment or to retaliate. The punished animal or child cowers and loses his confidence, or else becomes defiant. In addition, he may acquire long-lasting anxiety and guilt feelings."²

The most effective method of eliminating unwanted behavior is by completely eliminating the positive reinforcement which maintains it, and by working at the same time to displace it by providing positive reinforcement for wanted behavior which is incompatible with the unwanted behavior.²

Basic procedures in conditioning operant behavior

At least six basic procedures are considered essential in conditioning operant behavior. Each of these is stated below.⁴

1. DEFINE AND STATE OPERATIONALLY THE BEHAVIOR THAT IS TO BE CHANGED

This initial step is crucial to the success of a therapy program. The patient must understand what a deviate swallow pattern is as well as the characteristics of a correct swallowing pattern. This is accomplished with such aids as charts, pictures, and slides. If the patient should have deleterious sucking habits, the therapist must demonstrate how these noxious habits affect the dentition and the swallowing pattern.

2. OBTAIN A BASELINE OR OPERANT LEVEL OF THE BEHAVIOR THAT IS TO BE ELIMINATED OR CHANGED

The therapist can take a picture of the patient performing his deviate swallow. If the patient has noxious sucking habits, pictures of the habit are indicated to further establish

the reality of the problem. The therapist may want to graph or chart the times during which the sucking occurs. Likewise, if the patient is a mouth breather, the baseline level of this behavior should be established.

3. ARRANGE THE LEARNING OR TREATMENT SITUATION SO THAT THE DESIRABLE BEHAVIOR WILL OCCUR

Any objects such as blankets or teddy bears that elicit the sucking activity must be removed from the environment. Adenoid or tonsil obstructions that prohibit normal swallowing must be removed if the child is to be cured. If the child has allergies, these must be controlled before therapy can proceed. Tongue strength must be evaluated in terms of its capacity to remain in an elevated position. If tongue strengthening exercises are indicated, they should be initiated immediately so that the child will be physically capable of swallowing correctly. The palatal width must be checked carefully to be sure that it is adequate for the tongue to house itself in the correct position.

After these steps are completed, the demonstration and teaching of the new swallow pattern can occur. Every exercise must be broken down into its simplest parts and presented very clearly. The patient must be capable of successfully imitating each step that the therapist, or model, demonstrates before the following step can be tackled. It is essential that any failure on the patient's part to approximate the model's behavior must be totally ignored while praise is given for all successful attempts. The therapist must make sure that the child can perform the behavior at each step. If there is a great deal of difficulty performing a particular step, successive approximation of that step must be encouraged until the objective of the step is accomplished.

4. IDENTIFY POTENTIAL REINFORCERS

In order for most people to seriously change behavior, they must want something. Initially, the patient should have a total understanding of the problem. That good dental health is contingent on the correction of the deviate swallow is a basic motivational force. Unfortunately, however, the concept of "good dental health" may not be immediate and concrete enough to be a strong daily motivator. In order for therapy to be successful, the patient must identify with and want to please the therapist. This will occur if the therapist is attentive and affectionate to the patient. The patient must feel good about himself in the presence of the therapist. The patient will want to maintain a positive relationship so that attention, approval, and affection will be positive reinforcers.

The successful performance of swallow itself, first in isolation, then while eating food, and finally, unconsciously at all times may be very reinforcing for some patients. Mastering one lesson and then being able to go on to the following one provides a great deal of satisfaction for many. Patients who have to work at strengthening the lip musculature will be reinforced by seeing their lip strength measurably increase. Verbal reinforcement or praise can be a strong reinforcer. Children, however, respond very positively to material rewards such as toys, trinkets, stars, badges, and stickers. Older children respond to a token or point system which, when accumulated, will allow the attainment of a reinforcer.

Identification of potential reinforcers should occur during the case history or during initial sessions. A repertoire of varied reinforcers is important so the patient doesn't tire of a particular reinforcer and lose motivation. A question such as "What do you like to buy at the dime store?" will give the therapist some idea of what the child likes.

5. SHAPE AND/OR REINFORCE THE DESIRED BEHAVIOR

If the patient is able to perform a desired response, reinforce it on its first and every subsequent occurrence until it has become habit. If the patient is unable to perform a particular task, shape or identify and reinforce step-by-step responses that will ultimately

Fig. 2. The desired swallow is evoked by reinforcement, step by step, of successive approximations of the correct behavior. This is called shaping.

lead to the correct swallow pattern. Again, it is essential that the therapist ignore erroneous attempts and mistakes. Ridicule, punishment, and verbal abuse do not accomplish habit change.

6. MAINTAIN RECORDS OF THE REINFORCED BEHAVIOR TO DETERMINE WHETHER RESPONSE STRENGTH OR FREQUENCY HAS INCREASED

Once the patient has learned the correct swallow, making it a complete or total habit will be the goal. Reinforcement for positive time charts is effective. If the reinforcement has not produced the desired result, it is necessary to determine why and adjust appropriately.

GOALS	PHASE I	PHASE II	PHASE III	PHASE IV
Performance of tongue strengthening exercises				
Performance of correct swallow in isolation				
Practice of correct swallow in isolation				
Lip strengthening exercises performed				
Masseter strengthening exercises performed				
Practice eating food the correct way				
Practice habituation exercise				
Drink liquids the correct way				
Eat all foods the correct way				
Total habituation				

Fig. 3. Example of form used to record specific behaviors being modified. The myofunctional therapy regimen has been divided into four phases for the reinforcement schedule.

When behavior modification has established the desired behavior, the therapist will see and therefore reinforce the patient at longer and longer intervals. If, during the check-up visits, the therapist sees any regression, more intensive therapy will have to begin again.

The purpose of this article has been to familiarize the myofunctional therapist with the behavior modification theory of learning with the hope that its application will result in a healthier dental future for the patient.

BIBLIOGRAPHY

- Skinner, B. F. *Behavior of Organisms*. New York: Appleton-Century-Crofts, Inc. 1938.
- Platt, John. "Beyond Freedom and Dignity- A Revolutionary Manifesto." *The Center Magazine*, V, No. 2 (March/April, 1972).
- Blackham, Garth J. and Silberman, Adolph. *Modification of Child Behavior*. Wadsworth Publishing Co., 1971.
- Reese, E. P. *The Analysis of Human Operant Behavior*. Dubuque, Iowa: Wm. C. Brown, 1966.